

CHAIR PADDING WITH AIR CUSHION

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to improvements of chair padding and more particularly to a chair (e.g., office chair) having both seat and backrest padded with foam rubber and adjustable air cushion so as to be adapted to users of different weights.

2. Description of Related Art

Conventionally, the seat and the backrest of a chair (e.g., office chair) is padded with foam rubber or the like for providing the user with a degree of comfort while sitting thereon. One such office chair is shown in FIGS. 1 and 2. The chair comprises a seat 1 including a support board 2, a pad 3 formed of foam rubber disposed on the support board 2, a cloth 4 enclosed both the support board 2 and the pad 3 by stitching at the bottom of the support board 2, and a frame member 5 sandwiched between the support board 2 and a supporting framework 6 of the chair and threadedly secured to the support board 2.

In a case of a person sat on the seat 1, the pad 3 is compressed. However, the prior art suffered from several disadvantages. For example, the person may feel discomfort, particularly the vertebra, after a long period of sitting since the pad 3 is completely compressed to be very firm. Thus, the desired degree of comfort of sitting is compromised. Also, ventilation of the seat 1 is poor, especially in hot summer days. Thus, the need for improvement still exists.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a padding device mounted in each of a seat and a backrest of a chair, comprising a support board; a pad assembly secured on the support board, the pad assembly including a pad

formed of foam rubber, an airtight first cloth enclosed the pad and the support board, and a valve projected from the first cloth for communicating air within the pad and external air; a second cloth enclosed the pad assembly with the valve being projected therefrom; and a frame member secured between the pad assembly and a supporting framework or a vertically stationary upright backrest support attached to the supporting framework, wherein air within the pad is adapted to increase or decrease by adjusting the valve in response to pressing either the seat or the backrest. By utilizing the present invention, a number of advantages are obtained. For example, the temporarily deformed pad assembly can provide the buttocks and the back of a seated person with a degree of comfort. Also, the weight of the person is supported by both air within the pad and the pad itself similar to air cushion device. Moreover, heat generated on the buttocks or the back during sitting is substantially absorbed by air within foam rubber of the pad.

It is another object of the present invention to provide a padding device mounted in an integral seat and backrest assembly of a chair, comprising a support board; a pad assembly secured on the support board, the pad assembly including a pad formed of foam rubber, an airtight first cloth enclosed the pad and the support board, and a valve projected from the first cloth for communicating air within the pad and external air; a second cloth enclosed the pad assembly with the valve being projected therefrom; and a frame member secured between the pad assembly and a supporting framework, wherein air within the pad is adapted to increase or decrease by adjusting the valve in response to pressing either the seat or the backrest.

The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a chair incorporating a conventional seat and backrest padding;

FIG. 2 is a cross-sectional view of the seat shown in FIG. 1;

5 FIG. 3 is a perspective view of a first preferred embodiment of chair according to the invention;

FIG. 4 is a cross-sectional view of the seat shown in FIG. 3;

FIG. 5 is a cross-sectional view of the backrest shown in FIG. 3;

FIGS. 6 and 7 are views similar to FIG. 4 for illustrating the temporary
10 deformation of the seat while being seated by a person;

FIG. 8 is a view similar to FIG. 5 for illustrating the temporary deformation of the backrest while supporting the back of a seated person;

FIG. 9 is a perspective view of a second preferred embodiment of chair according to the invention; and

15 FIG. 10 is a cross-sectional view of the integral backrest and seat shown in FIG. 9.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 3, 4, and 5, there is shown a first preferred embodiment of chair (e.g., office chair) according to the invention. The chair comprises a
20 seat 10 and a separate backrest 20. Each component of the seat 10 and the backrest 20 will be described in detail below. As shown in FIG. 4, the seat 10 comprises a support board 11, a pad assembly 12 disposed on the support board 11, the pad assembly 12 including a pad 122 formed of foam rubber, an airtight first cloth 121 enclosed the pad 122, and a valve 123 projected from the
25 first cloth 121, the valve 123 having an inner end in communication with air within the pad 122, a second cloth 13 enclosed both the support board 11 and the first cloth 121 by stitching at the bottom of the support board 11 in which the

valve 123 is further projected from the second cloth 13 for communicating with external air, and a frame member 14 sandwiched between the support board 11 and a supporting framework 31 of the chair and threadedly secured to the support board 11. The pad 122 can be inflated by forcing air through the valve 123.

As shown in FIG. 5, the backrest 20 comprises a support board 21, a pad assembly 22 disposed on the support board 21, the pad assembly 22 including a pad 222 formed of foam rubber, an airtight third cloth 221 enclosed the pad 222, and a valve 223 projected from the third cloth 221, the valve 223 having an inner end in communication with air within the pad 222, a fourth cloth 23 enclosed both the support board 21 and the cloth 221 by stitching at the back of the support board 21 in which the valve 223 is further projected from the fourth cloth 23 for communicating with external air, and a frame member 24 sandwiched between the support board 21 and a vertically stationary upright backrest support 32 attached to the supporting framework 31 and threadedly secured to the support board 21. The pad 222 can be inflated by forcing air through the valve 223.

Referring to FIGS. 6 and 7, in a case of a person sat on the seat 10, the person may adjust the valve 123 by rotation to inflate or deflate the pad 122 until he/she feels a degree of comfort on the buttocks. In detail, a person having a heavier weight may adjust the valve 123 to inflate the pad 122 (i.e., the pad assembly 12 becomes firm) for providing a strong support. Alternatively, a person having a lighter weight may adjust the valve 123 to deflate the pad 122 (i.e., the pad assembly 12 becomes soft) for providing a weak support. In either case, air in the pad 122 under the buttocks is compressed to inflate other portions of the pad assembly 12. Such temporarily deformed pad assembly 12 (i.e., the top surface of the pad assembly 12 becomes curved) can provide the

buttocks of the person with a degree of comfort while sitting on the seat 10. Advantageously, the weight of the person is supported by both air within the pad 122 and the pad 122 (i.e., similar to air cushion device). Hence, such comfortable feeling can last during the sitting. Also, heat generated on the buttocks during sitting can be absorbed by air within foam rubber of the pad 122. In other words, ventilation of the seat 10 is good.

Referring to FIG. 8, similarly, the seated person may adjust the valve 223 by rotation to inflate or deflate the pad 222 until he/she feels a degree of comfort on the back. Air in the pad 222 against the back is compressed to inflate other portions of the pad assembly 22. Such temporarily deformed pad assembly 22 (i.e., the surface of the pad assembly 22 urged against the back becomes curved) can provide the back of the person with a degree of comfort while sitting on the seat 10. Advantageously, the back of the person is supported by both air within the pad 222 and the pad 222 (i.e., similar to air cushion device). Hence, such comfortable feeling can last during the sitting. Also, heat generated on the back during sitting can be absorbed by air within foam rubber of the pad 222. In other words, ventilation of the backrest 20 is good.

Referring to FIGS. 9 and 10, there is shown a second preferred embodiment of chair (e.g., office chair) according to the invention. The second preferred embodiment substantially has same structure as the first preferred embodiment except that the seat and the backrest are integrally formed as an L-shaped member 40. The L-shaped member 40 comprises an L-shaped support board 41, an L-shaped pad assembly 42 disposed on the support board 41, the pad assembly 42 including a pad 422 formed of foam rubber, an airtight first cloth 421 enclosed the pad 422, and a valve 423 projected from the first cloth 421, the valve 423 having an inner end in communication with air within

the pad 422, a second cloth 43 enclosed the support board 41 and the cloth 421 by stitching at the back of the support board 41 in which the valve 423 is further projected from the second cloth 43 for communicating with external air, and a frame member 44 sandwiched between the support board 41 and the supporting framework 31 and threadedly secured to the support board 41. The pad 422 can be inflated by forcing air through the valve 423. The second preferred embodiment substantially has same weight support and air cushion effects as the first preferred embodiment.

While the invention herein disclosed has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.